

**TRANSMITTAL OF APPEAL BRIEF (Large Entity)**

Docket No.  
00:117

In Re Application Of: Toshiyuki BABA et al.

Serial No.  
09/673,937

Filing Date  
October 24, 2000

Examiner  
M. Meller

Group Art Unit  
1651

Invention: Method of Stabilizing Enzyme and Enzyme Composition

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

The fee for filing this Appeal Brief is: \$330.00

- ☐ A check in the amount of the fee is enclosed.
- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
- ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 07-2100

  
Signature

Dated: November 24, 2003

R nald E. Greigg  
Registration No. 31,517  
Customer No. 02119

GREIGG & GREIGG, P.L.L.C.  
1423 Powhatan Street, Suite One  
Alexandria, Virginia 22314

Tel. (703) 838-5500/Fax (703) 838-5554  
CC:

I certify that this document and fee is being deposited on \_\_\_\_\_ with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Signature of Person Mailing Correspondence

Typed or Printed Name of Person Mailing Correspondence



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:

Toshiyuki BABA et al.

Examiner: Meller, M.

Serial No.: 09/673,937

Group Art Unit: 1651

Filed: October 24, 2000

Title: METHOD OF STABILIZING ENZYME AND ENZYME COMPOSITION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Date: November 24, 2003

**APPELLANTS' BRIEF (37 CFR 1.192)**

Sir:

This Appeal Brief is being filed in support of the Notice of Appeal submitted on September 26, 2003, which Notice of Appeal appeals the examiner's decision to make final a rejection against claims 28-62 in the Office action dated June 4, 2003.

This Brief is transmitted in triplicate.

**I - REAL PARTY IN INTEREST**

The real party in interest in this appeal is:

International Reagents Corporation  
1-30, Hamabe-dori 2-chome, Chuo-ku,  
Kobe-shi, Hyogo 651-0083  
JAPAN

11/26/2003 HDEHESS1 00000088 072100 09673937

01 FC:1402 330.00 DA

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

## II - RELATED APPEALS AND INTERFERENCES

None. There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

## III - STATUS OF CLAIMS

### A. TOTAL NUMBER OF CLAIMS IN APPLICATION - Thirty Five (35)

Claims in the application are: 28-62.

### B. STATUS OF ALL THE CLAIMS

1. Claims canceled: 1-27.
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: Thirty Five (35).
4. Claims allowed: None.
5. Claims rejected: 28-62.

### C. CLAIMS ON APPEAL

The claims on appeal are: 28-62.

Clean copies of claims 28-62 are attached hereto as an appendix to this Appeal Brief.

## IV.-STATUS OF AMENDMENTS

All amendments which have been filed have been entered.

#### V.-SUMMARY OF THE INVENTION

This invention is predicated on either valine, or proline, or both, being used to stabilize an enzyme solution. These chemicals are used as a stabilizer so that the resulting solution is sufficiently stable and can better be used as a control substance for use in comparing a test solution against the control substance.

#### VI.-ISSUES

1. Whether the specification supports claims 28-62 under the provisions of 35 USC 112, first paragraph.
2. Whether claims 28-62 are unpatentable under 35 USC 103(a) over Segal 1 in combination with Segal 2 in view of JP 0818095 and JP 60-224499, and further in view of Sanford et al, De Giogio et al or Warren et al.

#### VII.-REFERENCES

In view of the fact that seven references are cited in the paragraph which rejects the claims, and also in view of the nature of the references, especially the Segal references, it seems appropriate to clearly list the references being applied against claims 28-62. The references are:

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

Segal 1	SYMPOSIUM ON PYRIDOXAL ENZYMES
Segal 2	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS
JP 0818095	
JP 60-224499	
Sanford et al	US 4,450,232
De Giogio et al	US 5,804,402
Warren et al	US 5,814,473

#### VII.-GROUPING OF THE CLAIMS

The claims under consideration in this appeal are claims 28-62, which should not be considered to stand or fall together.

#### VIII.-ARGUMENTS

##### **A. Arguments - rejections under 35 USC 112, 1st paragraph:**

The examiner has rejected claims 28-62 as failing to comply with the written description requirement. Counsel believes that the examiner meant to say that the specification is objected to for failing to support the claims.

Be that as it may, the examiner has stated that all of the claims are so rejected, specifically pointing out that "Ranges such as the ranges in claims 29, 42, 48, 61, etc. do not find support in the instant specification." This sentence, which is

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

copied from the bottom of page 2 of the Final Rejection, gives the clear implication that the rest of the claims do find support in the specification.

The claims which the examiner specifically points out for not finding support in the specification recite that the concentration of "valine is from 0.5 to 50 mmol/L", or they recite that the concentration of "proline is less than 100 mmol/L and not less than 0.5 mmol/L".

First, we point out that from the language the examiner has used in this paragraph, it appears that he apparently believes that the language of the specification does support claims such as claim 28. And further, throughout the long prosecution history of this application, the Final Rejection of June 4, 2003 is the first time the examiner has made a rejection or objection for any claims not being supported by the specification. Claim 10, which was presented in the amendment dated September 24, 2001, and was acted on in Office actions dated November 30, 2001 and February 24, 2002, recites a range of valine of "from 0.5 to 100 mmol/L", and also recites "proline in an amount of from about 0.5-500 mmol/L". The language of claim 10 is that of a markush grouping, thus the claim recites a combination which includes either valine or proline, or both. And claim 10 recites both ranges to be greater than what the examiner is presently objecting to as not being supported. It seems inconsistent for the examiner to indicate that the claims with the narrower range do not find support in the specification, and yet claims with

broader ranges apparently, as evidenced by the lack of a rejection against them, are supported by the specification.

Moreover, in the Office action dated May 24, 2001 the examiner did not indicate that the specification does not support claims 1, 2, 4 and 9, all of which include the possibility of using only one of valine or proline as the stabilizer. Particularly, original claim 1 recited valine, if used alone, it is used at a concentration of between 0.5 to 100 mmol/L, and claim 4 recited that if Proline only was used, then the concentration should be within the range of .5 to 500 mmol/L. Thus, original claim 1 clearly includes and supports that appellants, prior to filing this application, considered the use of valine only within a range of 0.5 to 100 mmol/L, the same range as recited in claim 28, and a broader range than is recited in claim 29. Original claim 4 clearly includes and supports that appellants considered the use of Proline only within a range of less than 100 mmol/L and greater than 0.5 mmol/L, the range which is recited in claim 42.

These claims, 1- 2, 4, 9 and 10, all recite ranges for valine and proline which are broader than the ranges recited in the claims presently under consideration. And further, these claims all recite the ranges with language which provides that either can be used alone. This clearly implies that the present claims are supported by the original disclosure.

The specification, at page 12, lines 15-24 includes a recitation of valine alone in a range of 0.5 to 100 mmol/L, more preferably 10 to 20 mmol/L. Further, table 2

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

on page 23 of the specification teaches that valine only, at values of 0.5, 5, 10, 20, 50 and 100 mmol/L, provides a stabilizing effect. This information is verified on page 24. So clearly the specification supports the claimed range of valine alone at 0.5 to 50 mmol/L.

At page 25, lines 7-15 recite and support proline only is effective as a stabilizer at values of 5, 10, 100, 300 and 500 mmol/L. Table 3 on page 26 confirms this, and so does page 27 line 1 through page 28 line 6.

Thus, clearly the specification does provide adequate support for all of the claims presently in this application.

**B. Arguments - rejections under 35 USC 112, 2nd paragraph: None**

**C. Arguments - rejections under 35 USC 102: None**

**D. Arguments - rejections under 35 USC 103(a):**

Reconsideration is requested of the rejection of claims 28-62 as unpatentable under 35 USC 103(a) over Segal 1 in combination with Segal 2 in view of JP 0818095 and JP 60-224499 and further in view of Sanford et al, De Giogio et al or Warren et al, the examiner saying that Segal 1 clearly teaches using valine and proline, see Table 1 on page 39. The examiner has gone on to indicate that it is clear from Sanford, De Giogio and Warren that these two enzymes are commonly



used interchangeably in typical clinical settings and applicant even admits this fact on page 2 of their own specification.

The position of the examiner that this constitutes a valid rejection of these claims is traversed for the following reasons:

First, the most pertinent teaching in all of the cited art can be found in Segal 1 at table 1, on page 39 of this reference. This indicates that 5 different solutions were analyzed for their stability. At the top of the table it is indicated that all concentrations tested were 100 mmol/L. The numbers in parentheses indicate the relative stability of the five solutions.

In the third row of this table, Segal 1 indicates that the third solution includes valine at a concentration of 100 mmol/L, and that this solution gives a relative stability of 62. In the fourth row of this table, Segal 1 indicates that the fourth solution includes proline at a concentration of 100 mmol/L, and that this solution has a relative stability of 100.

The examiner has characterized that Segal 1 clearly teaches "valine and proline, see table 1, page 39." But care must be taken here. Segal 1 does not teach using both valine and proline to stabilize the same solution. Rather, Segal 1 teaches using each alternatively in a separate solution. And Segal 1 teaches using either valine or proline only at a concentration of 100 mmol/L.

None of the cited references teach using both valine and proline to stabilize the same solution.

Segal 2, at page 64, indicates proline can be used to stabilize a solution, and that the concentration of proline can be at 50 mmol/L, or at 10 mmol/L. Segal 2 never mentions valine in this disclosure.

The patent to Giorgio et al, at one single point, column 10, line 23, mentions valine but does not recite any concentration for the valine. This patent does not mention proline anywhere in its disclosure.

The patent to Sanford et al, at one single point, column 4, lines 48-49, mentions proline but does not recite any concentration for the proline. This patent does not mention valine anywhere in its disclosure.

The patent to Warren et al, at one single point, column 11, line 25, mentions D-valine but does not recite any concentration. This patent does not mention proline anywhere in its disclosure.

Neither of the cited Japanese abstracts mentions either valine or proline.

Thus, the invention recited in claims 29, 48, 61 and 62, for example, which each recite that valine is used at a concentration in the range of 0.5 to 50 mmol/L, is not taught by Segal 1. Segal 1 does not teach that a solution such as recited by these claims will be stabilized. The rest of the cited references cannot be said to in any way teach what is lacking from Segal 1 to meet these claims.

Claims 49-52 depend on claim 48 and should be allowable along with claim 48.

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

Claims 35, 53 and 59 each recite that both valine and proline are both used to stabilize the solution. The valine is recited at a concentration which Segal 1 does not teach. And further, these claims recite that both valine and proline are used to stabilize the same solution, and Segal 1 does not teach this combination. These are both features which Segal 1 does not teach. The rest of the cited references cannot in any way be said to teach what is lacking from Segal 1 to meet these claims.

Claims 36-40 depend on claim 35 and should be allowable along with claim 35, and claims 54-57 depend on claim 53 and should be allowable along with claim 53.

For each of the above reasons, reconsideration and allowance of the claims are courteously solicited.

#### IX - APPENDIX OF CLAIMS

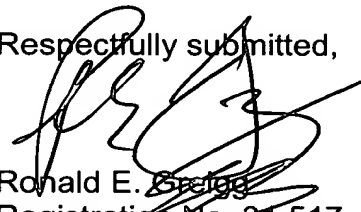
The appendix of appealed claims is attached.

The fee of \$330 is charged to Deposit Account No. 07-2100 by the attached deposit account form submitted in duplicate.

Date: November 24, 2003

1423 Powhatan Street, Suite One  
Alexandria, Virginia 22314  
Telephone: 703-838-5500  
Facsimile: 703-838-5554  
REG/SLS/clt

Respectfully submitted,



Ronald E. Greig  
Registration No. 31,517  
Attorney for Appellants  
Customer No. 02119

## **APPENDIX**

### **CLAIMS IN THE APPLICATION**

28. A control substance for clinical laboratory test comprising an aspartate aminotransferase, valine and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 100 mmol/L.
29. The control substance of Claim 28, wherein the concentration of the valine is 0.5 to 50 mmol/L.
30. The control substance of Claim 28, wherein the medium contains a soluble protein.
31. The control substance of Claim 30, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.
32. The control substance of Claim 31, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.
33. The control substance of Claim 31, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.
34. The control substance of Claim 28, further comprising alanine aminotransferase.

35. A control substance for clinical laboratory test comprising an aspartate aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L.

36. The control substance of Claim 35, wherein the medium contains a soluble protein.

37. The control substance of Claim 36, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.

38. The control substance of Claim 37, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.

39. The control substance of Claim 37, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.

40. The control substance of Claim 35, further comprising alanine aminotransferase

41. A control substance for clinical laboratory test comprising an aspartate aminotransferase, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the proline is from 0.5 to 500 mmol/L.

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

42. The control substance of Claim 41, wherein the concentration of the proline is less than 100 mmol/L and not less than 0.5 mmol/L.

43. The control substance of Claim 41, wherein the medium contains a soluble protein.

44. The control substance of Claim 43, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.

45. The control substance of Claim 44, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.

46. The control substance of Claim 44, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.

47. The control substance of Claim 41, further comprising alanine aminotransferase

48. A control substance for clinical laboratory test comprising an alanine aminotransferase, valine and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 50 mmol/L.

49. The control substance of Claim 48, wherein the medium contains a soluble protein.

50. The control substance of Claim 49, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.

51. The control substance of Claim 50, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.

52. The control substance of Claim 50, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.

53. A control substance for clinical laboratory test comprising an alanine aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L.

54. The control substance of Claim 53, wherein the medium contains a soluble protein.

55. The control substance of Claim 54, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.

56. The control substance of Claim 55, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.

57. The control substance of Claim 55, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.

58. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an aspartate aminotransferase, valine, and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 100 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

59. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an aspartate aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L; and



preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

60. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an aspartate aminotransferase, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the proline is from 0.5 to 500 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

61. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an alanine aminotransferase, valine and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 50 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

62. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an alanine aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:

Toshiyuki BABA et al.

Examiner: Meller, M.

Serial No.: 09/673,937

Group Art Unit: 1651

Filed: October 24, 2000

Title: METHOD OF STABILIZING ENZYME AND ENZYME COMPOSITION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Date: November 24, 2003

**APPELLANTS' BRIEF (37 CFR 1.192)**

Sir:

This Appeal Brief is being filed in support of the Notice of Appeal submitted on September 26, 2003, which Notice of Appeal appeals the examiner's decision to make final a rejection against claims 28-62 in the Office action dated June 4, 2003.

This Brief is transmitted in triplicate.

**I - REAL PARTY IN INTEREST**

The real party in interest in this appeal is:

International Reagents Corporation  
1-30, Hamabe-dori 2-chome, Chuo-ku,  
Kobe-shi, Hyogo 651-0083  
JAPAN

## II - RELATED APPEALS AND INTERFERENCES

None. There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

## III - STATUS OF CLAIMS

### A. TOTAL NUMBER OF CLAIMS IN APPLICATION - Thirty Five (35)

Claims in the application are: 28-62.

### B. STATUS OF ALL THE CLAIMS

1. Claims canceled: 1-27.
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: Thirty Five (35).
4. Claims allowed: None.
5. Claims rejected: 28-62.

### C. CLAIMS ON APPEAL

The claims on appeal are: 28-62.

Clean copies of claims 28-62 are attached hereto as an appendix to this Appeal Brief.

## IV.-STATUS OF AMENDMENTS

All amendments which have been filed have been entered.

#### V.-SUMMARY OF THE INVENTION

This invention is predicated on either valine, or proline, or both, being used to stabilize an enzyme solution. These chemicals are used as a stabilizer so that the resulting solution is sufficiently stable and can better be used as a control substance for use in comparing a test solution against the control substance.

#### VI.-ISSUES

1. Whether the specification supports claims 28-62 under the provisions of 35 USC 112, first paragraph.
2. Whether claims 28-62 are unpatentable under 35 USC 103(a) over Segal 1 in combination with Segal 2 in view of JP 0818095 and JP 60-224499, and further in view of Sanford et al, De Giorgio et al or Warren et al.

#### VII.-REFERENCES

In view of the fact that seven references are cited in the paragraph which rejects the claims, and also in view of the nature of the references, especially the Segal references, it seems appropriate to clearly list the references being applied against claims 28-62. The references are:

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

Segal 1	SYMPOSIUM ON PYRIDOXAL ENZYMES
Segal 2	BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS
JP 0818095	
JP 60-224499	
Sanford et al	US 4,450,232
De Giogio et al	US 5,804,402
Warren et al	US 5,814,473

#### VII.-GROUPING OF THE CLAIMS

The claims under consideration in this appeal are claims 28-62, which should not be considered to stand or fall together.

#### VIII.-ARGUMENTS

##### **A. Arguments - rejections under 35 USC 112, 1st paragraph:**

The examiner has rejected claims 28-62 as failing to comply with the written description requirement. Counsel believes that the examiner meant to say that the specification is objected to for failing to support the claims.

Be that as it may, the examiner has stated that all of the claims are so rejected, specifically pointing out that "Ranges such as the ranges in claims 29, 42, 48, 61, etc. do not find support in the instant specification." This sentence, which is

copied from the bottom of page 2 of the Final Rejection, gives the clear implication that the rest of the claims do find support in the specification.

The claims which the examiner specifically points out for not finding support in the specification recite that the concentration of "valine is from 0.5 to 50 mmol/L", or they recite that the concentration of "proline is less than 100 mmol/L and not less than 0.5 mmol/L".

First, we point out that from the language the examiner has used in this paragraph, it appears that he apparently believes that the language of the specification does support claims such as claim 28. And further, throughout the long prosecution history of this application, the Final Rejection of June 4, 2003 is the first time the examiner has made a rejection or objection for any claims not being supported by the specification. Claim 10, which was presented in the amendment dated September 24, 2001, and was acted on in Office actions dated November 30, 2001 and February 24, 2002, recites a range of valine of "from 0.5 to 100 mmol/L", and also recites "proline in an amount of from about 0.5-500 mmol/L". The language of claim 10 is that of a markush grouping, thus the claim recites a combination which includes either valine or proline, or both. And claim 10 recites both ranges to be greater than what the examiner is presently objecting to as not being supported. It seems inconsistent for the examiner to indicate that the claims with the narrower range do not find support in the specification, and yet claims with

broader ranges apparently, as evidenced by the lack of a rejection against them, are supported by the specification.

Moreover, in the Office action dated May 24, 2001 the examiner did not indicate that the specification does not support claims 1, 2, 4 and 9, all of which include the possibility of using only one of valine or proline as the stabilizer. Particularly, original claim 1 recited valine, if used alone, it is used at a concentration of between 0.5 to 100 mmol/L, and claim 4 recited that if Proline only was used, then the concentration should be within the range of .5 to 500 mmol/L. Thus, original claim 1 clearly includes and supports that appellants, prior to filing this application, considered the use of valine only within a range of 0.5 to 100 mmol/L, the same range as recited in claim 28, and a broader range than is recited in claim 29. Original claim 4 clearly includes and supports that appellants considered the use of Proline only within a range of less than 100 mmol/L and greater than 0.5 mmol/L, the range which is recited in claim 42.

These claims, 1- 2, 4, 9 and 10, all recite ranges for valine and proline which are broader than the ranges recited in the claims presently under consideration. And further, these claims all recite the ranges with language which provides that either can be used alone. This clearly implies that the present claims are supported by the original disclosure.

The specification, at page 12, lines 15-24 includes a recitation of valine alone in a range of 0.5 to 100 mmol/L, more preferably 10 to 20 mmol/L. Further, table 2



on page 23 of the specification teaches that valine only, at values of 0.5, 5, 10, 20, 50 and 100 mmol/L, provides a stabilizing effect. This information is verified on page 24. So clearly the specification supports the claimed range of valine alone at 0.5 to 50 mmol/L.

At page 25, lines 7-15 recite and support proline only is effective as a stabilizer at values of 5, 10, 100, 300 and 500 mmol/L. Table 3 on page 26 confirms this, and so does page 27 line 1 through page 28 line 6.

Thus, clearly the specification does provide adequate support for all of the claims presently in this application.

**B. Arguments - rejections under 35 USC 112, 2nd paragraph: None**

**C. Arguments - rejections under 35 USC 102: None**

**D. Arguments - rejections under 35 USC 103(a):**

Reconsideration is requested of the rejection of claims 28-62 as unpatentable under 35 USC 103(a) over Segal 1 in combination with Segal 2 in view of JP 0818095 and JP 60-224499 and further in view of Sanford et al, De Giogio et al or Warren et al, the examiner saying that Segal 1 clearly teaches using valine and proline, see Table 1 on page 39. The examiner has gone on to indicate that it is clear from Sanford, De Giogio and Warren that these two enzymes are commonly

used interchangeably in typical clinical settings and applicant even admits this fact on page 2 of their own specification.

The position of the examiner that this constitutes a valid rejection of these claims is traversed for the following reasons:

First, the most pertinent teaching in all of the cited art can be found in Segal 1 at table 1, on page 39 of this reference. This indicates that 5 different solutions were analyzed for their stability. At the top of the table it is indicated that all concentrations tested were 100 mmol/L. The numbers in parentheses indicate the relative stability of the five solutions.

In the third row of this table, Segal 1 indicates that the third solution includes valine at a concentration of 100 mmol/L, and that this solution gives a relative stability of 62. In the fourth row of this table, Segal 1 indicates that the fourth solution includes proline at a concentration of 100 mmol/L, and that this solution has a relative stability of 100.

The examiner has characterized that Segal 1 clearly teaches "valine and proline, see table 1, page 39." But care must be taken here. Segal 1 does not teach using both valine and proline to stabilize the same solution. Rather, Segal 1 teaches using each alternatively in a separate solution. And Segal 1 teaches using either valine or proline only at a concentration of 100 mmol/L.

None of the cited references teach using both valine and proline to stabilize the same solution.

Segal 2, at page 64, indicates proline can be used to stabilize a solution, and that the concentration of proline can be at 50 mmol/L, or at 10 mmol/L. Segal 2 never mentions valine in this disclosure.

The patent to Giorgio et al, at one single point, column 10, line 23, mentions valine but does not recite any concentration for the valine. This patent does not mention proline anywhere in its disclosure.

The patent to Sanford et al, at one single point, column 4, lines 48-49, mentions proline but does not recite any concentration for the proline. This patent does not mention valine anywhere in its disclosure.

The patent to Warren et al, at one single point, column 11, line 25, mentions D-valine but does not recite any concentration. This patent does not mention proline anywhere in its disclosure.

Neither of the cited Japanese abstracts mentions either valine or proline.

Thus, the invention recited in claims 29, 48, 61 and 62, for example, which each recite that valine is used at a concentration in the range of 0.5 to 50 mmol/L, is not taught by Segal 1. Segal 1 does not teach that a solution such as recited by these claims will be stabilized. The rest of the cited references cannot be said to in any way teach what is lacking from Segal 1 to meet these claims.

Claims 49-52 depend on claim 48 and should be allowable along with claim 48.

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

Claims 35, 53 and 59 each recite that both valine and proline are both used to stabilize the solution. The valine is recited at a concentration which Segal 1 does not teach. And further, these claims recite that both valine and proline are used to stabilize the same solution, and Segal 1 does not teach this combination. These are both features which Segal 1 does not teach. The rest of the cited references cannot in any way be said to teach what is lacking from Segal 1 to meet these claims.

Claims 36-40 depend on claim 35 and should be allowable along with claim 35, and claims 54-57 depend on claim 53 and should be allowable along with claim 53.

For each of the above reasons, reconsideration and allowance of the claims are courteously solicited.

#### IX - APPENDIX OF CLAIMS

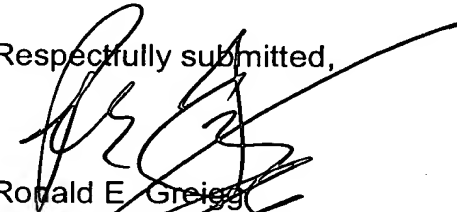
The appendix of appealed claims is attached.

The fee of \$330 is charged to Deposit Account No. 07-2100 by the attached deposit account form submitted in duplicate.

Date: November 24, 2003

1423 Powhatan Street, Suite One  
Alexandria, Virginia 22314  
Telephone: 703-838-5500  
Facsimile: 703-838-5554  
REG/SLS/clt

Respectfully submitted,

  
Ronald E. Greigg  
Registration No. 31,517  
Attorney for Appellants  
Customer No. 02119

## **APPENDIX**

### **CLAIMS IN THE APPLICATION**

28. A control substance for clinical laboratory test comprising an aspartate aminotransferase, valine and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 100 mmol/L.
29. The control substance of Claim 28, wherein the concentration of the valine is 0.5 to 50 mmol/L.
30. The control substance of Claim 28, wherein the medium contains a soluble protein.
31. The control substance of Claim 30, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.
32. The control substance of Claim 31, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.
33. The control substance of Claim 31, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.
34. The control substance of Claim 28, further comprising alanine aminotransferase.

35. A control substance for clinical laboratory test comprising an aspartate aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L.
36. The control substance of Claim 35, wherein the medium contains a soluble protein.
37. The control substance of Claim 36, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.
38. The control substance of Claim 37, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.
39. The control substance of Claim 37, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.
40. The control substance of Claim 35, further comprising alanine aminotransferase
41. A control substance for clinical laboratory test comprising an aspartate aminotransferase, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the proline is from 0.5 to 500 mmol/L.

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

42. The control substance of Claim 41, wherein the concentration of the proline is less than 100 mmol/L and not less than 0.5 mmol/L.

43. The control substance of Claim 41, wherein the medium contains a soluble protein.

44. The control substance of Claim 43, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.

45. The control substance of Claim 44, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.

46. The control substance of Claim 44, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.

47. The control substance of Claim 41, further comprising alanine aminotransferase

48. A control substance for clinical laboratory test comprising an alanine aminotransferase, valine and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 50 mmol/L.

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

49. The control substance of Claim 48, wherein the medium contains a soluble protein.

50. The control substance of Claim 49, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.

51. The control substance of Claim 50, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.

52. The control substance of Claim 50, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.

53. A control substance for clinical laboratory test comprising an alanine aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L.

54. The control substance of Claim 53, wherein the medium contains a soluble protein.

55. The control substance of Claim 54, wherein the soluble protein is at least one soluble protein selected from the group consisting of albumin and gelatin.



56. The control substance of Claim 55, wherein the concentration of albumin is within the range of from 0.5 to 15 w/v%.

57. The control substance of Claim 55, wherein the concentration of gelatin is within the range of from 0.5 to 15 w/v%.

58. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an aspartate aminotransferase, valine, and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 100 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

59. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an aspartate aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

60. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an aspartate aminotransferase, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the proline is from 0.5 to 500 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

61. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an alanine aminotransferase, valine and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 0.5 to 50 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.

Appl. No. 09/673,937  
Appeal Brief dated November 24, 2003  
Following the Notice of Appeal filed September 26, 2003

62. A production method of a control substance for clinical laboratory test comprising;

preparing a mixture of an alanine aminotransferase, valine, proline and medium selected from the group consisting of a serum and buffer, wherein a concentration of the valine is from 5 to 20 mmol/L and a concentration of the proline is from 10 to 500 mmol/L; and

preparing a product from the mixture, wherein the product is selected from the group consist of freeze-dried product of the mixture, cold-stored product of the mixture and frozen-liquid product of the mixture.